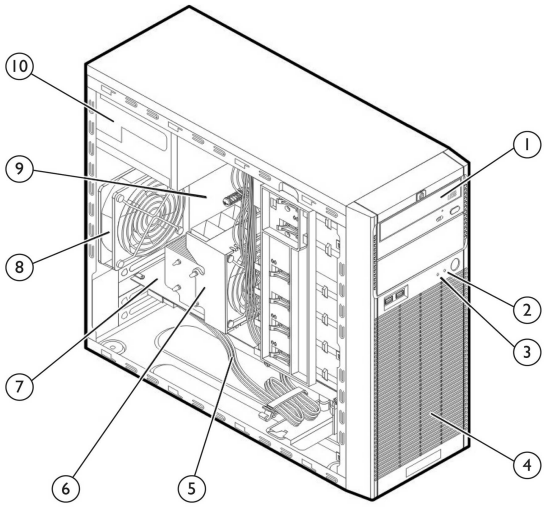
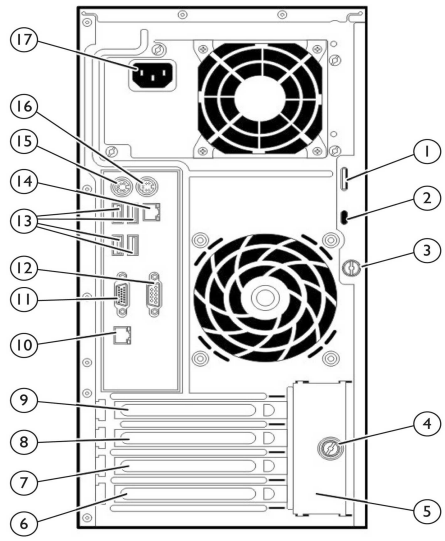
*Overview*




Front View:

1. DVD-ROM Drive
2. Power LED
3. Drive Activity LED
4. Front Bezel
5. SAS Cable (SAS model only)
6. CPU Heatsink
7. Hard Drive Controller Card (Optional)
8. System Fan
9. System Board
10. 300W Power Supply

Rear View:

1. Kensington lock notch
2. Cable lock provision notch
3. Access panel thumbscrew
4. Expansion slot cover retainer thumb screw
5. Expansion slot cover
6. Expansion slot 1
7. Expansion slot 2
8.. Expansion slot 3
9. Expansion slot 4
10. Management NIC port (RJ-45)
11. Video port
12. Serial port
13. USB ports
14. Embedded NIC port (RJ-45)
15. PS/2 keyboard port
16. PS/2 mouse port
17. Power supply cable socket

## What's New

- Support for Intel® i3-550 FIO Processor Kit and Intel® Xeon® X3470 FIO Processor Kit
- Support for 2TB non hot-plug SATA drive

*Standard Features*

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

| | |
|---|---|
| Processor<br>One of the following depending on Model | Quad-Core Processors<br>Intel® Xeon® X3470 (2.93GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/4/5) Processor<br>NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.<br>Intel® Xeon® X3460 (2.80GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/4/5) Processor<br>NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.<br>Intel® Xeon® X3450 (2.66GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/4/4) Processor<br>Intel® Xeon® X3440 (2.53GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/2/3) Processor<br>NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.<br>Intel® Xeon® X3430 (2.40GHz/4-core/8MB/95W, 1333, Turbo 1/1/2/3) Processor<br>Dual-Core Processors<br>Intel® Core™ i3-550 (3.20GHz/2-core/4MB/73W, 1333, HT) Processor<br>NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.<br>Intel® Core™ i3-540 (3.06GHz/2-core/4MB/73W, 1333, HT) Processor<br>NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.<br>Intel® Core™ i3-530 (2.93GHz/2-core/4MB/73W, 1333, HT) Processor<br>NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.<br>Intel® Pentium® G6950 (2.80GHz/2-core/3MB/73W, 1066) Processor<br>Intel® Celeron® G1101 (2.26GHz/2-core/2MB/73W, 1066) Processor<br>NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.<br>NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology.<br>NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active.<br>NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed. |
| Cache Memory<br>One of the following depending on Model | Integrated 8MB Intel® Smart Cache (Xeon 3400 series)<br>Integrated 4MB Intel® Smart Cache (Core i3 series)<br>Integrated 3MB Intel® Smart Cache (Pentium G6950)<br>Integrated 2MB Intel® Smart Cache (Celeron G1101) |
| Chipset | Intel® 3420 chipset<br>NOTE: For more information regarding Intel chipsets, please see the following URL:<br>http://www.intel.com/products/server/chipsets/ |

*Standard Features*

| | | |
|---|---|---|
| **Memory Protection** | ECC | |
| **Memory** | Type | PC3-10600E unbuffered DDR3 ECC up to 1333MHz |
| | DIMM Slots | Total 4 DIMM slots |
| | Standard | 2GB (1x2GB) or 4GB (2x2GB) |
| | Maximum | 16GB |
| **Network Controller** | Embedded NC107i PCI Express Gigabit Ethernet Server Adapter | |

| Expansion Slots # | Technology | Bus Width*** | Connector Width | Bus Number* | Device Number** | Form Factor | Notes |
|---|---|---|---|---|---|---|---|
| 1 | PCIe | X1 | X4 | 16 | 0 | Full height, half length slot | Gen.1, NHP |
| 2 | PCI | 32 bit | N/A | 48 | 0 | Full height & Full-length slot | 33MHz/3.3V, NHP |
| 3 | PCIe | X4 | X8 | 32 | 0 | Full height & Full-length slot | Gen.1, NHP |
| 4 | PCIe | X16 | X16 | 1 | 0 | Full height & Full-length slot | Gen.2, NHP |

*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.
** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
*** Indicates the number of physical electrical lanes running to a PCI-e connector.

| | | |
|---|---|---|
| **Storage Controller** | HP Embedded Smart Array B110i SATA RAID Controller (RAID 0/1/10)<br>NOTE: Supports up to four (4) 3.0Gb/s SATA hard disk drives only<br>NOTE: For set up instructions, please refer to the HP ProLiant ML100 series server user guide at: http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c01708878/c01708878.pdf<br>NOTE: For general information about HP Smart Array B110i SATA RAID Controller, please go to: http://h18004.www1.hp.com/products/servers/proliantstorage/arraycontrollers/smartarrayb110i/index.html | |
| **Internal Storage Devices** | **Optical Drive** | HP Half-Height SATA DVD-ROM Optical Drive ships standard |
| | **Hard Drives**<br>One of the following depending on Model | 1x160 GB NHP SATA 7200 rpm Drive (Entry Model)<br>1x250 GB NHP SATA 7200 rpm Drive (Base Model)<br>2x250 GB NHP SATA 7200 rpm Drive (Performance Model) |

*Standard Features*

| | | |
|---|---|---|
| Maximum Internal Storage<br>One of the following depending on Model | Non-Hot Plug SAS | 2.4TB (4 x 600GB) 3.5" SAS |
| | Non-Hot Plug SATA | 8.0TB (4 x 2TB) 3.5" SATA |

| | | |
|---|---|---|
| Interfaces | Parallel | 0 |
| | Serial | 1 |
| | Pointing Device (Mouse, PS2) | 1 |
| | Graphics | 1 |
| | Keyboard (PS2) | 1 |
| | USB 2.0 Ports | 8 total (4 rear, 2 front panel, 2 internal (one for USB Tape connectivity)) |
| | NOTE: 1 Dedicated USB port available for internal USB tape connectivity<br>NOTE: Please see the following URL for additional information regarding USB support<br>http://h18004.www1.hp.com/products/servers/platforms/usb-support.html | |
| | Network RJ-45 (Ethernet) | 1(10/100/1000 bits/s) |
| | Remote Management | HP Lights-Out 100i |

| | |
|---|---|
| Industry Standard Compliance | ACPI V3.0a Compliant<br>PCI 2.3 Compliant<br>PXE Support<br>WOL Support<br>IPMI 2.0 compliance<br>DCMI 1.0<br>Microsoft® Logo certifications<br>Red Hat Enterprise Linux Logo certifications<br>SUSE Linux Enterprise Server Logo certifications<br>USB 2.0 |
| Server Power Cords | 6' country specific, lowline NEMA power cord. |
| Power Supply | 300 Watts Non-Hot Plug, Non redundant Power Supply |
| System Fans | One (1) - Non-redundant system fan ships standard<br>One (1) - Non-redundant CPU heatsink fan ships standard |

*Standard Features*

| | |
|---|---|
| Operating Systems and Virtualization Software Support for ProLiant Servers | Microsoft Windows Server<br>Red Hat Enterprise Linux (RHEL)<br>SUSE Linux Enterprise Server (SLES)<br>NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/supportos and our driver download page http://www.hp.com/support/ML110G6 |
| Graphics | 64MB shared supporting all display resolutions up to 1600 x 1200 16bpp @ 75Hz<br>NOTE: 8MB is dedicated to video memory. |
| Form Factor | Micro ATX Tower (4U)<br>NOTE: Rack mounting available via HP Tower to Rack Conversion Tray, Universal Kit. Please see the options section in this QuickSpecs. |
| Embedded Manageability HP LO100i Advanced | HP LO100i Lights-Out 100 with Optional LO100i Advanced Licenses for Virtual KVM and Virtual Media.<br><br>Features:<br><br>• Embedded IPMI standard reporting<br>• System event log access<br>• Remote Serial console (serial redirection)<br>• Browser, Telnet access<br>• SMASH-CLP compliant<br>• DCMI 1.0 compliant<br>• IPMI 2.0 compliant<br>• Secure Socket Layer Encryption<br>• Secure Shell Encryption<br>• Virtual media (Floppy, CD, DVD, ISO image, USB 2.0) with Advanced License<br>• Virtual KVM with Advanced License<br><br>NOTE: For more information, please refer to the QuickSpecs for the LO100i found at: www.hp.com/go/lo100 |

*Standard Features*

| | | |
|---|---|---|
| Core Infrastructure Management | HP ProLiant ML110 G6 Easy Set-up CD | The HP ProLiant Easy Set-up CD optimizes single-server setup, providing a simple way to deploy reliable and consistent server configurations. The HP ProLiant 100 Series Easy Set-up CD ships standard with the ML110 G6.<br><br>It offers essential single-server deployment tools for HP ProLiant 100 series servers that simplify HP entry server setup, providing a repeatable way to deploy reliable and consistent single-server configurations. The HP ProLiant Easy Set-up CD assists with the OS installation process by preparing the system for installing "off-the-shelf" versions of Windows operating system software and automatically integrating optimized HP ProLiant server software drivers and utilities. Users enjoy the following benefits:<br><br>• An easy-to-use, intuitive graphical interface that prepares your system for the OS installation process.<br>• Integration of key server software drivers with assisted installation.<br>• Dependency and validity checks to ensure that all supported ProLiant software can be installed.<br><br>NOTE: For the latest information about other related software; please visit the HP Insight Control Management Software Portfolio at: http://h18004.www1.hp.com/products/servers/management/ and the HP ProLiant Easy Set-up CD Web site at: www.hp.com/servers/easysetup |
| Manageability | | HP Integrated Lights-Out 100i with optional LO100i Advanced Licenses for Virtual KVM and Virtual Media<br>Embedded Lights Out 100 IPMI 2.0 standard reporting<br>Standard HP ProLiant ML110 G6 Easy Set-Up CD<br>Array Configuration Utility (ACU)<br>Array Diagnostics Utility (ADU)<br>HP Insight Diagnostics<br>HP Insight Management Agents and Insight Management Providers for Systems Insight Manager (SIM) Integration |
| Security | | Power-on password<br>Setup password<br>Secure Sockets Layer (SSL)<br>Secure Shell (SSH) |

*Standard Features*

**Warranty**

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair are available for one year from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 1 year parts, 1 year labor, 1-year on-site support with next business day response. (3-1-1 warranty offered in Brazil only). Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

*Optional Features*

**Factory Express Portfolio for Servers and Storage**

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and/or storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging and custom packaging HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers, as well as, the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express

**HP Enterprise Configurator**

The HP eConfigure Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator.

Service and Support

For increased uptime, productivity and ROI - HP Care Pack packaged services for Servers

These days, you need to get the most out of your server investment - you can't afford not to. When you buy HP server products and solutions, it's also a good time to think about what levels of service and support you may need. To help take the worry out of deploying, designing, maintaining, and managing your environment, we've designed a portfolio of service options that are as: flexible, reliable and scalable as your server. Unlike server-only vendors, we take a holistic approach to your entire environment, bridging storage, servers, blades, software and network infrastructures with our HP Care Pack packaged services for Servers.

Protect your business beyond the warranty

When it comes to robustness and reliability, standard warranties on today's computing equipment have matured just as the technologies have matured. Good news on some fronts - but also a source of potential problems and subsequent consequences that come from depending on standard warranties alone. Standard warranty protects against product defects and some causes of downtime - but not the business. By using a standard approach to warranty uplifts, such as HP Care Pack Services, you can reduce downtime risks and be more certain of operational consistency for both mission-critical and standard business computing. Simply put, HP Care Pack Services normalize the warranty of combined products - helping you proactively guard against unplanned downtime.

Extending warranties with HP Care Pack Services

For cost-effective upgrading or extending your standard warranty, HP Care Pack Services offer a suite of standard reactive hardware and software support services that are sold separately, or combined as with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition, with HP Proactive Select we offer an innovative approach to service delivery that gives you the flexibility to acquire the specific proactive services you need today, then add services as your needs evolve. HP Proactive Select offers a broad set of technical or per-event type service options - including server, storage, and network, SAN device, and software, environment, installation and education services. Services that you can mix and match depending on your specific requirements, from preliminary planning and equipment delivery to installation, configuration, integration, and testing, through every level of ongoing support. Our HP Care Pack packaged services for Servers assures help when you need it most. And for many products, post-warranty HP Care Pack Services are available when your original warranty has expired.

HP Server Services: Offering reliability, flexibility and value - just like your storage

HP Server Services offers a full spectrum of customer care, from technology support to complex migrations to complete completely managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education offers flexible, comprehensive training on server networking and server software to help your IT staff get the most out of your investments. And HP Financial solutions extend innovative financing and asset management programs to cost-effective buy, manage and eventually retire your older equipment.

HP Server Services, the trusted business technology experts who manage your technology in action, because when technology works, business works. http://www.hp.com/services/servers, http://www.hp.com/services/storage

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at: http://www.hp.com/go/lookuptool

NOTE: Care Pack Services availability may vary by product and country.

## Recommended HP Care Pack Services for optimal satisfaction with your HP product

Recommended Services

### 3-Year HP Hardware Support Onsite Service, 4-hour response, 13x5

Delivering increased equipment availability and productivity with rapid-response onsite and remote support for your HP hardware, as well as selected multivendor equipment, this flexible HP Care Pack Service covers desktops, workstations, servers, storage systems, network equipment, and printing.

Choose 4-Hour Same Business Day Hardware Support when you need to:

- Extend your hardware warranty coverage with prompt service for key systems and devices
- Obtain easy-to-buy, easy-to-use onsite services
- Improve hardware performance and uptime
- Increase the return on your HP and multivendor hardware investments
- Enjoy consistent service coverage across geographically dispersed sites
- Optional Defective Media Retention Service

Service feature highlights

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE

### 3-Year HP Hardware Support Onsite Service, Next-day response (9x5)

HP ProLiant services: Our integrated service portfolio covers the entire solution lifecycle for x86 server environments - from installation and support through the design, deployment, and management of complex IT environments - so that you can confidently address any IT and business need.
HP Hardware Support Onsite Service provides high-quality remote assistance and onsite support for your covered hardware, helping you to improve product time.

Service feature highlights

- Help improve or maintain system uptime
- Convenient onsite support
- Reliable response time

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE

### HP ProLiant Server Hardware Installation

HP Installation Service provides for the basic installation of HP branded servers, workstations, desktop systems, notebook PCs, thin clients, storage devices, printers, networking, and software products. The Installation Service is part of a suite of HP deployment services that are designed to give you the peace of mind that comes from knowing your HP and HP-supported products have been installed by an HP specialist in accordance with the manufacturer's product documentation.

- Expedited installation, with all service prerequisites met before the installation is performed
- Installation in accordance with manufacturer's specifications, enhancing the supportability of your HP-installed hardware and software
- Service delivery at a mutually scheduled time
- Allows your IT resources to stay focused on their core tasks and priorities
- Availability of an HP service specialist to answer questions during the onsite delivery of this service

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

## Optional HP Care Pack Services that will enhance your HP product experience

Optional Services

### 3-Year HP Hardware Support Onsite Service, 4-hour response, 24x7

As an alternative to our recommended support level, for customers who need same day response server level 24x7.

Provides high-quality remote assistance and onsite support for your covered hardware, helping you to improve product uptime.

Service benefits:

- Help improved system uptime
- Convenient onsite support
- Reliable response time
- Remote problem diagnosis and support
- Onsite hardware support
- Materials included
- Service-level options with different coverage windows and response times
- Work to completion
- Escalation management
- Access to electronic support information and services
- HP electronic remote monitoring and support solution (for eligible products only)

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE

### 3-Year HP Hardware Support Onsite Call-to-Repair (CTR) Service - 24-hour CTR

As an alternative to our recommended support level, for customers who need committed call-to-repair for server hardware.

HP Hardware Support Onsite 24x7 24-Hour Call-to-Repair Service provides your IT manager access to a team of support specialists. They will quickly begin troubleshooting the system to help return the hardware to operating condition within a maximum of 24 hours from the initial service request.

HP is committed to repairing your hardware within a maximum of six hours. The benefits include:

- Improved system uptime
- Predictable repair times
- More effective IT resource planning
- Consistent level of hardware support across your multi-technology systems
- Optional defective media retention service

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6636ENN

3-Year HP Hardware Support Onsite Call-to-Repair (CTR) Service - 6-hour CTR

As an alternative to our recommended support level, for customers who need committed call-to-repair for server hardware.

HP Hardware Support Onsite 24x7 6-Hour Call-to-Repair Service provides your IT manager access to a team of support specialists. They will quickly begin troubleshooting the system to help return the hardware to operating condition within a maximum of six hours from the initial service request.

HP is committed to repairing your hardware within a maximum of six hours. The benefits include:

- Improved system uptime
- Predictable repair times
- More effective IT resource planning
- Consistent level of hardware support across your multi-technology systems
- Optional defective media retention service

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6636ENN

eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal
The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: http://www.hp.com/support

HP Insight Remote Support software delivers secure remote support for your HP Servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.

*Service and Support*

| | |
|---|---|
| Customer Technical Training | HP Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction. For a list of all our awards, please visit: http://h20219.www2.hp.com/services/cache/433028-0-0-225-121.htm |
| HP Services Awards | HP Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction. For a list of all our awards, please visit: http://h20219.www2.hp.com/services/cache/433028-0-0-225-121.htm |
| Additional Services Information | For more information about HP Care Pack Services for Servers, please visit: http://www.hp.com/services/servers<br><br>To learn more on HP ProLiant servers and HP BladeSystem, please contact your HP sales representative or HP Authorized Channel Partner, or visit: www.hp.com/services/proliant or www.hp.com/services/bladesystem. |

## SATA Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.
NOTE: HP NHP Internal SAS/SATA 4 port cable kit (487734-B21) is required when Smart Array Controller is ordered with a BTO configuration
NOTE: For general information about HP Smart Array B110i SATA RAID Controller, please visit:
http://h18004.www1.hp.com/products/servers/proliantstorage/arraycontrollers/smartarrayb110i/index.html

| Entry Model | | |
|---|---|---|
| HP ProLiant ML110 G6 G6950 1P 2GB-U Non-hot Plug 160GB SATA LFF 300W PS Server<br>506666-xx1 | Processor | (1) Intel® Pentium® processor G6950 (2.80GHz, 73W, 3MB, 1066) |
| | Cache Memory | 3MB Intel® Smart Cache |
| | Memory | 2GB (1x2GB) PC3-10600E DDR3 UB ECC<br>NOTE: Total 4 DIMM slots. |
| | Network Controller | Embedded NC107i PCI Express Gigabit Ethernet Server Adapter |
| | Storage Controller | HP Embedded Smart Array B110i SATA RAID Controller (RAID 0/1/10) (4 ports for HDD) |
| | Hard Drive | 1 x 160GB Non-hot-plug LFF SATA |
| | Internal Storage | 8.0TB (4 x 2.0TB) Non-hot plug LFF SATA (Maximum) |
| | Optical Drive | HP Half-Height 16x SATA DVD-ROM |
| | Power Supply | 300W Non-Hot Plug, Non-Redundant Power Supply |
| | Fans | One (1) - Non-redundant system fan ships standard<br>One (1) - Non-redundant CPU heatsink fan ships standard |
| | Management | Integrated HP ProLiant 100 G6 Lights Out 100i Remote Management |
| | Form Factor | Micro ATX Tower (4U) |
| | Warranty | Server Warranty includes 1 year parts, 1 year labor, 1-year on-site support with next business day response. (3-1-1 warranty offered in Brazil only). |

*Pre-configured Models*

| | | |
|---|---|---|
| **Base Model** | **Processor** | (1) Intel® Xeon® processor X3430 (2.40GHz, 95W, 8MB, 1333, Turbo 1/1/2/3) |
| **HP ProLiant ML110 G6 X3430 1P 2GB-U Non-hot Plug 250GB SATA LFF 300W PS Base Svr** 506667-xx1 | **Cache Memory** | 8MB Intel® Smart Cache |
| | **Memory** | 2GB (1x2GB) PC3-10600E DDR3 UB ECC<br>NOTE: Total 4 DIMM slots. |
| | **Network Controller** | Embedded NC107i PCI Express Gigabit Ethernet Server Adapter |
| | **Storage Controller** | HP Embedded Smart Array B110i SATA RAID Controller (RAID 0/1/10) (4 ports for HDD) |
| | **Hard Drive** | 1 x 250GB Non-hot-plug LFF SATA |
| | **Internal Storage** | 8.0TB (4 x 2.0TB) Non-hot plug LFF SATA (Maximum) |
| | **Optical Drive** | HP Half-Height 16x SATA DVD-ROM |
| | **Power Supply** | 300W Non-Hot Plug, Non-Redundant Power Supply |
| | **Fans** | One (1) - Non-redundant system fan ships standard<br>One (1) - Non-redundant CPU heatsink fan ships standard |
| | **Management** | Integrated HP ProLiant 100 G6 Lights Out 100i Remote Management |
| | **Form Factor** | Micro ATX Tower (4U) |
| | **Warranty** | Server Warranty includes 1 year parts, 1 year labor, 1-year on-site support with next business day response. (3-1-1 warranty offered in Brazil only). |

| | | |
|---|---|---|
| **Performance model** | **Processor** | (1) Intel® Xeon® processor X3450 (2.66GHz, 95W, 8MB, 1333, HT, Turbo 1/1/4/4) |
| **HP ProLiant ML110 G6 X3450 1P 4GB-U Non-hot Plug 500GB SATA LFF 300W PS Server** 506668-xx1 | **Cache Memory** | 8MB Intel® Smart Cache |
| | **Memory** | 4GB (2x2GB) PC3-10600E DDR3 UB ECC<br>NOTE: Total 4 DIMM slots. |
| | **Network Controller** | Embedded NC107i PCI Express Gigabit Ethernet Server Adapter |
| | **Storage Controller** | HP Embedded Smart Array B110i SATA RAID Controller (RAID 0/1/10) (4 ports for HDD) |
| | **Hard Drive** | 2 x 250GB Non-hot-plug LFF SATA |
| | **Internal Storage** | 8.0TB (4 x 2.0TB) Non-hot plug LFF SATA (Maximum) |
| | **Optical Drive** | HP Half-Height 16x SATA DVD-ROM |
| | **Power Supply** | 300W Non-Hot Plug, Non-Redundant Power Supply |
| | **Fans** | One (1) - Non-redundant system fan ships standard<br>One (1) - Non-redundant CPU heatsink fan ships standard |
| | **Management** | Integrated HP ProLiant 100 G6 Lights Out 100i Remote Management |
| | **Form Factor** | Micro ATX Tower (4U) |
| | **Warranty** | Server Warranty includes 1 year parts, 1 year labor, 1-year on-site support with next business day response. (3-1-1 warranty offered in Brazil only). |

*Pre-configured Models*

| | | |
|---|---|---|
| Country Code Key | xx=00 | NA |
| | xx=01 | Australia |
| | xx=03 | UK |
| | xx=04 | Germany |
| | xx=05 | France |
| | xx=37 | AP |
| | xx=42 | Euro |
| | xx=AA | PRC (Excludes P/N 506666-xx1) |

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is only available as a factory installable option.

## Step 1: Base Configuration

| | | |
|---|---|---|
| HP Models | HP ProLiant ML110 G6 Configure-to-order Server | 510078-B21 |
| | **Factory Integrated Models ship with:** | |
| | Embedded NC107i PCI Express Gigabit Ethernet Server Adapter | |
| | Integrated HP ProLiant 100 G6 Lights Out 100i Remote Management | |
| | HP Embedded Smart Array B110i SATA RAID Controller (RAID 0/1/10), 4 ports for HDD<br>NOTE: For set up instructions for HP Smart Array B110i SATA Controller please refer to the HP ProLiant ML100 series server user guide at:<br>http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c01708878/c01708878.pdf<br>NOTE: For general information about HP Smart Array B110i SATA RAID Controller, please visit:<br>http://h18004.www1.hp.com/products/servers/proliantstorage/arraycontrollers/smartarrayb110i/index.html | |
| | Non hot-plug SAS/SATA 4 port cable | |
| | Easy set up CD | |
| | PCA | |
| | Power cord | |
| | Micro ATX Tower (4U) | |

## Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

| | | |
|---|---|---|
| HP Processors | **Quad-Core Processor** | |
| | HP ML110G6 Intel® Xeon® X3470 (2.93GHz/4-core/8MB/95W) FIO Processor Kit | 622187-L21 |
| | HP ML110 G6 Intel® Xeon® X3460 (2.80GHz/4-core/8MB/95W) FIO Processor Kit | 578348-L21 |
| | HP ML110 G6 Intel® Xeon® X3450 (2.66GHz/4-core/8MB/95W) FIO Processor Kit | 578347-L21 |
| | HP ML110 G6 Intel® Xeon® X3440 (2.53GHz/4-core/8MB/95W) FIO Processor Kit | 578346-L21 |
| | HP ML110 G6 Intel® Xeon® X3430 (2.40GHz/4-core/8MB/95W) FIO Processor Kit | 578345-L21 |
| | **Dual-Core Processor** | |
| | HP ML110G6 Intel® Xeon® i3-550 (3.20GHz/2-core/4MB/73W) FIO Processor Kit | 622185-L21 |
| | HP ML110 G6 Intel® Core™ i3-540 (3.06GHz/2-core/4MB/73W) FIO Processor Kit | 578352-L21 |
| | HP ML110 G6 Intel® Core™ i3-530 (2.93GHz/2-core/4MB/73W) FIO Processor Kit | 578351-L21 |
| | HP ML110 G6 Intel® Pentium® G6950 (2.80GHz/2-core/3MB/73W) FIO Processor Kit | 578350-L21 |

| | | |
|---|---|---|
| | HP ML110 G6 Intel® Celeron G1101 (2.26GHz/2-core/2MB/73W) FIO Processor Kit | 578349-L21 |
| HP Memory | HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500672-B21 |
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500670-B21 |
| | HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500668-B21 |
| | NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator. | |
| HP Optical Drives | HP Half-Height SATA DVD-ROM Optical Drive | 447326-B21 |
| | HP Half-Height SATA DVD-RW Optical Drive | 447328-B21 |
| HP Hard Drives | SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives | |
| | HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive | 507774-B21 |
| | HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive | 507772-B21 |
| | HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive | 458941-B21 |
| | SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives | |
| | HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive | 571232-B21 |
| | HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive | 458947-B21 |
| | SAS Non-Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives<br>NOTE: Support for SAS non-hot plug drives requires HP SAS/Smart Array Controller. See Step 3 below. | |
| | HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive | 516830-B21 |
| | HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive | 516826-B21 |
| | HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive | 516824-B21 |

| | | |
|---|---|---|
| HP Storage Controllers | SAS Controller | |
| | NOTE: Support for SAS hard drives/tape drive requires selection of a SAS controller. | |
| | NOTE: Support for hardware RAID requires selection of a SAS controller. | |
| | Smart Array P212 Controller | |
| | HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller | 491191-B21 |

## Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

| | | |
|---|---|---|
| HP USB and SD Options | HP ProLiant Server PS/2 Mouse, FIO | AC105A |
| | HP ProLiant Server PS/2 Keyboard, FIO | AC110A |

## Step 4: Choose Additional Options for Factory Integration

NOTE: For additional "Core Options" and "Additional Options", please refer to the "Options" sections below.

*Core Options*

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

| | | |
|---|---|---|
| HP Memory | HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500672-B21 |
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500670-B21 |
| | HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500668-B21 |
| | NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator. | |
| HP Optical Drives | HP Half-Height SATA DVD-ROM Optical Drive | 447326-B21 |
| | HP Half-Height SATA DVD-RW Optical Drive | 447328-B21 |
| HP Hard Drives | NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, and firmware) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components. NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. | |
| | SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives | |
| | HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive | 507774-B21 |
| | HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive | 507772-B21 |
| | HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive | 458941-B21 |
| | SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives | |
| | HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive | 571232-B21 |
| | HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive | 458947-B21 |
| | NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide) | |
| | SAS Non-Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives NOTE: Support for SAS non-hot plug drives requires HP SAS/Smart Array Controller. | |
| | HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive | 516830-B21 |
| | HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive | 516826-B21 |
| | HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive | 516824-B21 |

*Core Options*

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)

| | | |
|---|---|---|
| HP Networking | HP NC112T PCI Express Gigabit Server Adapter | 503746-B21 |
| | HP NC360T PCI-E Dual Port Gigabit Server Adapter | 412648-B21 |
| | HP NC373T PCI-E Multifunction Gigabit Server Adapter | 394791-B21 |
| | HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter | 458492-B21 |
| | NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs | |

*Additional Options*

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

| | | |
|---|---|---|
| HP Entry-Level Server Management | HP Lights-Out 100i (LO100i) Advanced including 1yr 24x7 Support Single Server License<br>NOTE: For additional License Kits please see the Lights-Out 100i QuickSpecs at: www.hp.com/go/lo100. | 530521-B21 |
| HP Security (TPM) | HP Trusted Platform Module Option<br>NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline.<br>NOTE: For more information about TPM, please visit: www.hp.com/go/TPM<br>NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.<br>NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss. | 488069-B21 |
| HP Storage Controllers | SAS Controllers<br>NOTE: Support for SAS hard drives/tape drive requires selection of a SAS controller.<br>NOTE: Support for hardware RAID requires selection of a SAS controller. | |
| | Smart Array P212 Controller | |
| | HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller | 462828-B21 |
| | HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller | 462834-B21 |
| | Optional Upgrades | |
| | HP 256MB P-series Cache Upgrade | 462968-B21 |
| | HP 650 mAh P-Series Battery<br>NOTE: Required to enable BBWC on the 256MB cache. | 462969-B21 |
| | HP Non-Hot Plug Internal SAS/SATA 4 Port Cable Kit<br>NOTE: This cable will only be required when Smart Array Controller is ordered with a BTO configuration. | 487734-B21 |
| | HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License<br>NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services. | 516471-B21 |

*Additional Options*

| | | |
|---|---|---|
| | NOTE: Please see the following QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller) http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html (Smart Array Advanced Pack) | |
| | SCSI HBA | |
| | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter<br>NOTE: Supports SCSI Tapes only, no RAID support.<br>NOTE: HBA is recommended for SCSI tape drive support.<br>NOTE: Please see the following QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA) | 412911-B21 |
| HP Backup & Recovery Software | Data Protector Express | |
| | HP Data Protector Express V5.0 for 1 Server E-LTU | TC330AAE |
| | HP Data Protector Express V5.0 for 3 Servers E-LTU | TC331AAE |
| | HP Data Protector Express V5.0 for 10 Servers E-LTU | TC332AAE |
| | HP Basic Upgrade to Data Protector Express V5 for 1 Server E-LTU | TC333AAE |
| | NOTE: Only one of these Data Protector Express base products is required. To see available options: http://www.hp.com/go/dataprotectorexpress | |
| HP Tape Backup | NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP StorageWorks tape backup products see: http://www.hp.com/go/connect. | |
| | HP StorageWorks DAT 320 USB Internal Tape Drive | AJ825A |
| | HP StorageWorks DAT 320 SAS Internal Tape Drive<br>NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended. | AJ830A |
| | HP StorageWorks Ultrium 448 SAS Internal Drive<br>NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended. | DW085A |
| | HP StorageWorks Ultrium 920 SAS Internal Tape Drive<br>NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended. | EH847A |
| | HP StorageWorks 1/8 G2 Ultrium 920 SAS Autoloader<br>NOTE: Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended. | AH558A |
| | HP StorageWorks MSL2024 Ultrium 920 SAS Tape Library<br>NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended. | AH559A |

*Additional Options*

| | | |
|---|---|---|
| HP Disk Backup | NOTE: For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk backup products see: http://www.hp.com/go/connect. | |
| | HP StorageWorks D2D Backup Systems with Backup Data Deduplication | |
| | NOTE: These are network connected appliances with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. | |
| | HP StorageWorks D2D2502i Backup System<br>NOTE: 1.5TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. | EJ001B |
| | HP StorageWorks D2D2504i Backup System<br>NOTE: 3.0TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. | EJ002B |
| | USB Removable Media RDX Disk Backup Systems | |
| | HP StorageWorks RDX320 Internal Removable Disk Backup System<br>NOTE: 320GB of disk capacity per data cartridge. | AJ767A |
| | HP StorageWorks RDX500 Internal Removable Disk Backup System<br>NOTE: 500GB of disk capacity per data cartridge. | AJ934A |
| HP Uninterruptible Power Systems | HP Tower UPS | |
| | HP T750 G2 UPS Models | |
| | HP T750 G2 750VA INTL Tower Uninterruptible Power System | AF447A |
| | HP T750 G2 750VA NA Tower Uninterruptible Power System | AF446A |
| | HP T750J JP Uninterruptible Power System | AF456A |
| | HP T1000 G3 UPS Models | |
| | HP T1000 G3 1000VA INTL Tower Uninterruptible Power System | AF449A |
| | HP T1000 G3 1000VA NA Tower Uninterruptible Power System | AF448A |
| | HP T1000J JP Uninterruptible Power System | AF457A |
| | NOTE: For additional information regarding HP Uninterruptable Power Systems, please see the following URL: www.hp.com/go/rackandpower (Worldwide)<br>NOTE: For additional information on sizing your server, please reference: http://www.upssizer.com | |
| | NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords. | |

*Additional Options*

| | | |
|---|---|---|
| HP Rack Series | HP Rack 10000 G2 Series (Graphite Metallic) | |
| | HP 10642 G2 Pallet Universal Rack | AF001A |
| | HP 10642 G2 Shock Universal Rack | AF002A |

NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.

NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)

NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower (Worldwide)

NOTE: The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

NOTE: HP ProLiant DL rack models have fixed rails which provide support for racks with round mounting holes and tool-free support for racks with square mounting holes (including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 26" - 36".

NOTE: Support for all 2 and 4 post Telco racks and threaded hole racks requires an additional option kit from Rack Solutions. The Rack Solutions brackets can be purchased at: www.hp.com/go/rackandpower.

*Additional Options*

| | | |
|---|---|---|
| HP Rack Options | **HP KVM Switch Options** | |
| | Server console switch 0x2x8 | AF616A |
| | Server console switch 0x2x16 | AF617A |
| | 0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC | AF618A |
| | 0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC | AF619A |
| | 1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC | AF620A |
| | 2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC | AF621A |
| | 4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC | AF622A |
| | NOTE: For additional information regarding KVM Switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm. | |
| | **HP Rack Options** | |
| | HP Tower to Rack Conversion Tray Universal Kit | 417705-B21 |
| HP USB and SD Options | HP USB 2-Button Optical Mouse ALL | DC172B |
| | HP USB 04 Standard Keyboard | DT528A#xxx |
| | NOTE: For the installation of Windows and other OS's, a floppy drive or the HP USB Floppy Drive Key may be required to complete driver installation. A standard USB drive key may not work to complete driver installation. | |
| HP Care Pack Services | **Hardware Services Next Business Day On-Site Service** | |
| | 9-Hour x 5-Day Coverage, 3 Years, Electronic | U4433E |
| | **Hardware Services - 4-Hour On-site Service** | |
| | 13-Hour x 5-Day Coverage, 3 Years, Electronic | U4434E |
| | 24-Hour x 7-Day Coverage, 3 Years, Electronic | U4435E |
| | **Hardware Services 6-Hour Call to Repair On-Site Service** | |
| | 6-Hour Call to Repair, On-Site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic | U4436E |
| | **Hardware Installation** | |
| | Hardware Installation, Electronic | U4444E |
| | NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack. | |

HP ProLiant ML110 G6 Models

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

Standard Memory

SATA Models:
2GB or 4 GB of PC3-10600E DDR3 UDIMM running up to 1333MHz with memory kits installed.

Standard Memory with Optional Memory

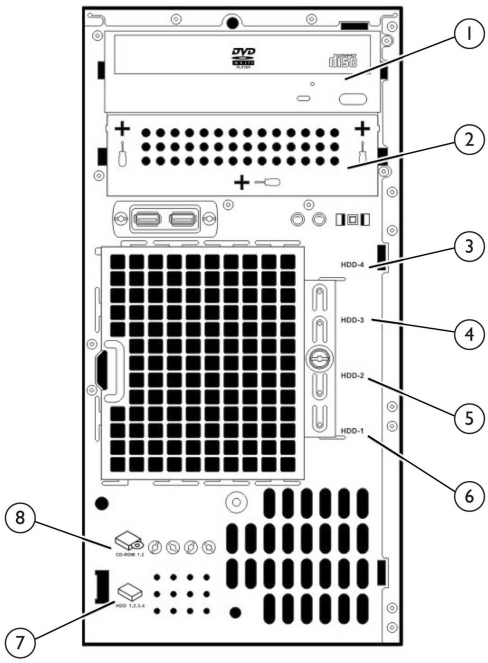
Up to 8GB of memory is available with the installation of standard and optional memory, 4x 2 GB PC3-10600E un-buffered ECC DDR3 SDRAM DIMM Memory kits.

NOTE: The below chart does not represent all possible memory configurations.
NOTE: For best performance, it is recommended that customer installs memory in identical pairs (Slots 1C and 3D are interleaving pair. Slots 2A and 4B are interleaving pair).

| Memory | | Slot | | | |
|---|---|---|---|---|---|
| | | DIMM1C | DIMM2A | DIMM3D | DIMM4B |
| Standard (Entry Model) | 2 GB | Empty | 2 GB | Empty | Empty |
| Standard (Base Model) | 2 GB | Empty | 2 GB | Empty | Empty |
| Standard (Performance Model) | 4 GB | Empty | 2 GB | Empty | 2 GB |
| Maximum | 16 GB | 4 GB | 4 GB | 4 GB | 4 GB |

Following are memory options available from HP:

| | | |
|---|---|---|
| HP Memory | HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500672-B21 |
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500670-B21 |
| | HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500668-B21 |
| | NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. | |




1. 1st removable media drive
2. 2nd removable media drive
3. 4th SAS/SATA hard drive
4. 3rd SAS/SATA hard drive
5. 2nd SAS/SATA hard drive
6. 1st SAS/SATA hard drive
7. HDD spare screws
8. Removable media drive spare screws

## Drive Support

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| **Removable Media** | | | |
| DVD Drive | 2 | 1 or 2 | Integrated SATA |
| DVD-RW Drive | 2 | 1 or 2 | Integrated SATA |

*Storage*

Hard Drives (SATA Models only)

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, and firmware) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 2TB 3G 7.2K<br>1TB 3G 7.2K<br>500GB 3G 7.2K | Up to 4 | 3,4,5,6 | Smart Array B110i SATA RAID Controller (RAID 0/1/10)<br>NOTE: Hardware RAID support requires purchase of HP Smart Array P212 Controller. |

SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 250GB 3G 7.2K<br>160GB 3G 7.2K | Up to 4 | 3,4,5,6 | Smart Array B110i SATA RAID Controller (RAID 0/1/10)<br>NOTE: Hardware RAID requires purchase of HP Smart Array P212 Controller. |

Hard Drives (SAS Models only)

SAS Non-Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

NOTE: SAS non-hot plug drives require HP SAS/Smart Array Controller.

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 600GB 6G 15K DP<br>450GB 6G 15K DP<br>300GB 6G 15K DP | Up to 4 | 3,4,5,6 | Smart Array P212 Controller<br>NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the Controller. Refer to the Controller technical specifications for details. |

Maximum Storage Capacity - SATA/SAS Models

| | | |
|---|---|---|
| Internal | SATA | 8.0TB (4 x 2TB) |
| | SAS | 2.4TB (4 x 600GB) |

Tape and Disk-Based Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: http://www.hp.com/go/tape. For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: http://www.hp.com/go/connect.

| | Position | Recommended Controller | Part Number |
|---|---|---|---|
| HP StorageWorks SCSI Tape Drives<br>LTO-1 Ultrium 232<br>LTO-2 Ultrium 448<br>LTO-3 Ultrium 920<br>LTO-3 Ultrium 960<br>LTO4 Ultrium 1760<br>LTO-4 Ultrium 1840<br>DAT 40<br>DAT 72 | Internal or External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |

*Storage*

| | | | |
|---|---|---|---|
| DAT 160 | | | |
| **HP StorageWorks SCSI Rack Mount Kits**<br>1U Rack-Mount Kit<br>3U Rack-Mount Kit | External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |
| **HP StorageWorks USB Tape Drives**<br>DAT 40<br>DAT 72<br>DAT 160<br>DAT 320 | Internal or External | USB 2.0 Port | N/A |
| **HP StorageWorks USB Rack Mount Kits**<br>1U USB Rack-Mount Kit | External | USB 2.0 Port | N/A |
| **HP StorageWorks SAS Tape Drives**<br>DAT 160<br>DAT 320<br>LTO-2 Ultrium 448<br>LTO-3 Ultrium 920<br>LTO-4 Ultrium 1760<br>LTO-4 Ultrium 1840<br>LTO-5 Ultrium 3000<br>LTO-5 Ultrium 3280 | Internal or External | HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller | 462828-B21 |
| **HP StorageWorks SAS Rack Mount Kits**<br>1U Rack-Mount Kit<br>3U Rack-Mount Kit | External | HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller | 462828-B21 |
| **HP StorageWorks SCSI Tape Autoloaders**<br>DAT 72x10 Autoloader<br>1/8 G2 Autoloader | External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |
| **HP StorageWorks SCSI Tape Libraries**<br>MSL2024<br>MSL4048<br>MSL8096<br>MSL6000 | External | HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter | AH627A |
| **HP StorageWorks SAS Tape Autoloaders and** | External | HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller | 462828-B21 |

*Storage*

| | | | |
|---|---|---|---|
| **Libraries**<br>1/8 G2 Autoloader<br>MSL2024<br>MSL4048<br>MSL8096 | | | |
| **HP StorageWorks Fibre Channel Tape Libraries**<br>MSL2024<br>MSL4048<br>MSL8096<br>MSL6000 | External | Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs. | |
| **HP StorageWorks USB RDX Removable Disk Backup System**<br>RDX160<br>RDX320<br>RDX500<br>RDX750 | Internal or External | USB 2.0 port | N/A |
| **HP StorageWorks D2D Backup Systems, iSCSI**<br>D2D2500i<br>D2D4000i | External | Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. | |
| **HP StorageWorks D2D Backup Systems, Fibre Channel**<br>D2D4000fc | External | Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect | |

*Power Specifications*

300 Watts Non-Hot Plug, Non redundant Power Supply

| | |
|---|---|
| Part Number | 445067-001 |
| Operational Input Voltage Range (Vrms) | 100 to 127 and 200 to 240 V auto ranging |
| Frequency Range (Nominal) (Hz) | 50 to 60 Hz |

| Nominal Input Voltage (Vrms) | 100 | 120 | 200 | 230 | 240 |
|---|---|---|---|---|---|
| Max Rated Output Wattage Rating | 300 | 300 | 300 | 300 | 300 |
| Nominal Input Current (A rms) | 5 | 5 | 2.5 | 2.5 | 2.5 |
| Max Rated Input Wattage Rating (Watts) | 400 | N/A | N/A | 400 | N/A |
| Max. Rated VA (Volt-Amp) | 400 | N/A | N/A | 400 | N/A |
| Efficiency (%) | 80% | 80% | 80% | 80% | 80% |
| Power Factor | 0.9 | N/A | N/A | 0.9 | N/A |
| Leakage Current (mA) | 3.5mA | N/A | N/A | N/A | N/A |
| Maximum Inrush Current (A peak) | N/A | No component was damaged and input fuse shall not blow | N/A | No component was damaged and input fuse shall not blow | N/A |
| Maximum Inrush Current duration (mS) | N/A | N/A | N/A | N/A | N/A |

| | Power ** |
|---|---|
| HP ProLiant ML110 G6 Fully Configured | (see **) |
| Fully Loaded System output Wattage (W) | 300W |
| Fully Loaded System Input Current (A rms) | 5A @ 100V, 2.5A @ 200V |
| Fully Loaded System Thermal (BTU- Hr) | 1277BTU |
| Fully Loaded System VA (Volt-Amp) | 400 VA |
| System Leakage with all power supplies loaded (mA) | 3.5mA@110V<br>3.5mA@220V |
| System Inrush Current with all power supplies loaded (A) | <150A@240Vac |
| Power cord requirements | Nema 5-15P to IEC320-C13 |
| | IEC320-C13 to IEC320-C14 |
| | **Power shown is for a fully configured system consisting of (1) CPU, (4) double-sided DIMMs, (4) HDDs, (1) DVD-ROM, (4) PCI cards, and (1) power supply. |

| Power Cords (13 Cord Sets) | Power Cord Part Number |
|---|---|
| Country | |
| Taiwan | 393312-001 |
| Japan | 139867-005 |
| India | 397138-002 |
| Brazil | 285052-001 |
| Australia | 100661-001 |
| Euro | 100614-009 |
| PRC | 286496-001 |
| UK | 100613-008 |
| US | 121565-001 |
| ITL | 109197-008 |

NOTE: To review typical system power ratings use the Active Answers HP Power Advisor which is available via the online tool located at URL: http://www.hp.com/go/hppoweradvisor

To drill down to calculators:
- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: ML110 G6
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

| | | | |
|---|---|---|---|
| System Unit | **Dimensions** (HxWxD) (with feet) | 14.38 x 6.9 x 16.8 in (36.52 x 17.5 x 42.6 cm) | |
| | **Weight** (approximate) | Maximum (all hard drives, power supplies, and processors installed) | 30.53 lb (13.85 kg) |
| | | Minimum (one hard drive, power supply, and processor installed) | 25.13 lb (11.4 kg) |
| | **Input Requirements** (per power supply) | Rated Line Voltage | 90 to 132 VAC, 180 to 264 VAC |
| | | Rated Input Current | 5 A (at 100 VAC), 2.5 A (at 200 VAC) |
| | | Rated Input Frequency | 47 to 63 Hz |
| | | Rated Input Power | 400 W (at 100 VAC), 400 W (at 200 VAC) |
| | **Power Specifications** | To review typical power ratings use the Power Advisor which is available via the online tool located at URL: http://www.hp.com/go/hppoweradvisor | |
| | **Power Supply Output** (per power supply) | Rated Steady-State Power | 300 W (at 100 VAC), 300 W (at 200 VAC) |
| | | Maximum Peak Power | 300 W (at 100 VAC), 300 W (at 200 VAC) |
| | **System Inlet Temperature** | Operating | 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System may shut down if operating with a fan fault or above 42°C °(107.6°F). |
| | | Non-operating | -35° to 65°C (-31° to 149°F). Maximum rate of change is 20°C/hr (36°F/hr). |
| | **Relative Humidity** (non-condensing) | Operating | 10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing. |
| | | Non-operating | 10% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing. |
| | **Altitude** | Operating | 3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 609 m/min (2000 ft/min). |
| | | Non-operating | 9144 m (30,000 ft). Maximum allowable altitude change rate is 609 m/min (2000 ft/min). |

| | | | |
|---|---|---|---|
| | Acoustic Noise | Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). | |
| | | Idle | |
| | | $L_{WAd}$ | 4.32 Bels |
| | | $L_{pAm}$ | 24.9 dBA |
| | | Operating | |
| | | $L_{WAd}$ | 4.41 Bels |
| | | $L_{pAm}$ | 25 dBA |
| | | NOTE: The listed sound levels above apply to standard SATA configurations. Additional options may result in increased sound levels. | |
| | Emissions Classification (EMC) | FCC Rating | Class B |
| | | Normative Standards | CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1 |
| | | NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements. | |
| HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive | 458947-B21 | Capacity | 160,041MB |
| | | Height<br>Maximum drive dimension | 1.028 in. (26.1 mm) |
| | | Width | 4.00 in (101.6 mm) |
| | | Depth<br>Maximum drive dimension | 5.787 in (147.0 mm) |
| | | Interface | Serial ATA |
| | | Transfer Rate<br>(Maximum) | 3Gb/s |
| | | Native Command Queuing | Supported |
| | | Seek Time<br>(typical reads, including settling) | Single Track 2.0 ms<br>Average <11 ms<br>Full-Stroke 22.0 ms |
| | | | Rotational Speed 7,200 rpm |
| | | Physical Configuration | Bytes/Sector 512 |
| | | | Logical Blocks 312,581,808 |
| | | Operating Temperature<br>(system inlet air temperature) | 50° to 95° F (10° to 35° C) |

*Technical Specifications*

| | | | | |
|---|---|---|---|---|
| HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive | 571232-B21 | **Capacity** | 250,059MB | |
| | | **Height** Maximum drive dimension | 1.028 in. (26.1 mm) | |
| | | **Width** | 4.00 in (101.6 mm) | |
| | | **Depth** Maximum drive dimension | 5.787 in (147.0 mm) | |
| | | **Interface** | Serial ATA | |
| | | **Transfer Rate** (Maximum) | 3Gb/s | |
| | | **Native Command Queuing** | Supported | |
| | | **Seek Time** (typical reads, including settling) | Single Track | 2.0 ms |
| | | | Average | 11 ms |
| | | | Full-Stroke | 21.0 ms |
| | | | Rotational Speed | 7,200 rpm |
| | | **Physical Configuration** | Bytes/Sector | 512 |
| | | | Logical Blocks | 488,397,168 |
| | | **Operating Temperature** (system inlet air temperature) | 50° to 95° F (10° to 35° C) | |

| | | | |
|---|---|---|---|
| HP Half-Height 16X Max SATA DVD-ROM Optical Drive | **Disk** | Applicable Disk | CD-ROM, CD-XA, CD-DA (Mode 1, Mode 2, Form 1 and 2)<br>Photo CD (Single and Multi-session)<br>Mixed Mode (Audio and Data combined)<br>CD-R, CD-RW, DVD-ROM, DVD+R, DVD+RW |
| | | Capacity | 4.7 GB (DVD-5)<br>8.54 GB (DVD-9) |
| | **Block Size** | DVD Media | 2,048 bytes |
| | **Interface** | SATA | 3Gb/s |
| | **Access Times** (typical) | Random | <140 ms |
| | | Full-Stroke | <250 ms |
| | **Data Transfer Rate** | Sustained | 8100 to 21600 KB/s (6X to 16X) |
| | **Cache Buffer** | 128 KB | |
| | **Start-up Time** (typical) | < 7 seconds | |
| | **Stop Time** | < 4 seconds | |
| | **Laser Parameters** | Type | Semiconductor Laser GaA1As |
| | | Wave Length | 780 ± 25 nm |
| | **Operating Conditions** | Temperature | 41° to 122° F (5° to 50° C) |
| | | Humidity | 10% to 90% |
| | **Dimensions** | (HxWxD, maximum) | 1.7 x 5.85 x 8.11 in (42.9 x 150 x 195 mm) |
| | | Weight | 2.64 lb (1.2 kg) |

| | | |
|---|---|---|
| Embedded NC107i PCIe Gigabit Server Adapter (Embedded) | Network Interface | Integrated 10/100/1000BASE-T Transceiver<br>Combines a triple-speed IEEE 802.3TM - Compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver. |
| | Data Transfer Method | Compliant to x1 PCIe Specification |
| | Controller | BCM5723 |
| | Network Transfer Rate | 10Base-T (Half-Duplex) 10 Mb/s<br>10Base-T (Full-Duplex) 20 Mb/s<br>100Base-TX (Half-Duplex) 100 Mb/s<br>100Base-TX (Full-Duplex) 200 Mb/s<br>1000Base-TX (Half and Full-Duplex) 2000Mb/s |
| | Connector | RJ-45 connector |
| | Cable Support | Performs all the physical layer functions for 10BASE-T, 100BASE-T, and 1000BASE-T Ethernet on standard Category 5 UTP |

| | | |
|---|---|---|
| Environment-friendly Products and Approach | End-of-life Management and Recycling | Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.<br><br>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. |

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.